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RESEARCH ARTICLE

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Chromosome numbers for the Italian flora: 8

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Abstract

In this contribution, new chromosome data obtained on material collected in Italy are presented. It includes three chromosome counts from two taxa endemic to Southern Italy (*Centaurea subtilis* and *Onobrychis alba* subsp. *echinata*) and one species (*Poa ligulata*) occurring in Italy with only one recently discovered population.

Keywords

Abruzzo, Basilicata, cytogeography, cytotaxonomy, Puglia, Southern Italy

How to contribute

Texts concerning new chromosome data should be submitted electronically to Giovanni Astuti (gastuti@biologia.unipi.it), including indications on voucher specimens and methods used.

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Chromosome counts

Asteraceae

Centaurea subtilis Bertol.

Chromosome number. $2n = 22$ (Fig. 1)

Voucher specimen. Italy. Basilicata. Belvedere di Murgia, Altopiano della Murgia Materana (Matera) (WGS84: 40.664530N, 16.616152E), ca. 400 m s.l.m., 25 August 2017, *L. Peruzzi* (PI n°014382).

Method. Squash preparations were made on root-tips obtained from germinating cypselae. Root tips were pre-treated with 0.4% colchicine for 3 hours and then fixed in Carnoy fixative solution for 1 hour. After hydrolysis in HCl 1N at 60 °C, the tips were stained in leuco-basic fuchsine.

Observations. *Centaurea subtilis* is endemic to Southern Italy, where it has been recorded for only two regions: Puglia and Basilicata. This is the first count for plants from Basilicata; the chromosome number found, $2n = 22$, is in accordance with the counts previously published for other populations from Puglia (Damboldt and Matthäs 1975, Bianco et al. 1991).

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Figure 1. *Centaurea subtilis* Bertol., $2n = 22$. Scale bar: 10 µm.

Fabaceae

***Onobrychis alba* (Waldst. & Kit.) Desv. subsp. *echinata* (Guss.) P.W.Ball**

Chromosome number. $2n = 14$ (Fig. 2)

Voucher specimen. Italy. Puglia. Gravina di Leucaspide (Statte, Taranto) (WGS84: 40.566319N, 17.190559E), gariga, 150 m s.l.m., 25 June 2019, *L. Bernardo & G. Maiorca* (CLU).

Method. Squash preparations were made on root-tips obtained from germinating seeds. Root tips were pre-treated with 0.4% colchicine for 3 hours and then fixed in Carnoy fixative solution for 1 hour. After hydrolysis in HCl 1N at 60 °C, the tips were stained in leuco-basic fuchsine.

Observations. *Onobrychis alba* subsp. *echinata* is endemic to Southern Italy, where it occurs in Puglia, Basilicata, and Calabria. Cenci et al. (2000) reported a chromosome number $2n = 2x = 14$ for all the Italian subspecies of *O. alba*, but without providing any information about the source of these data. Therefore, we report here the

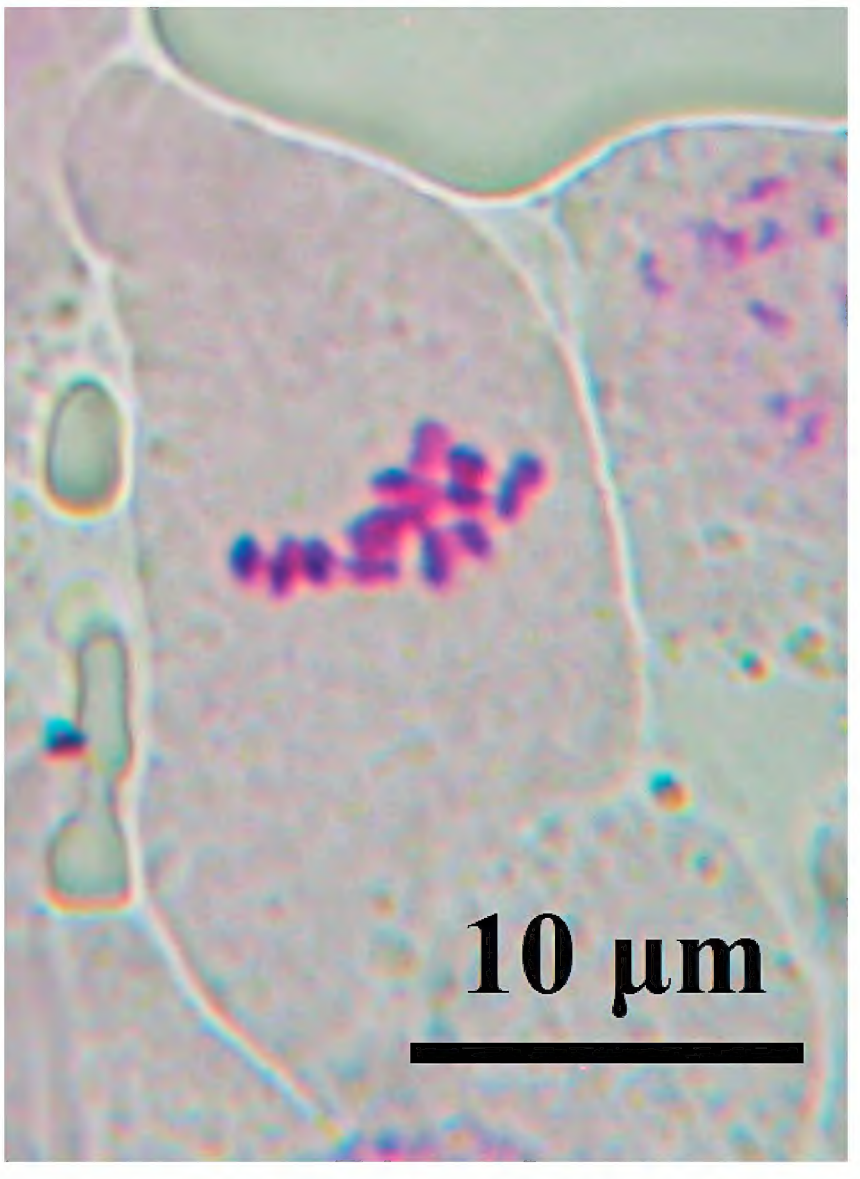

Figure 2. *Onobrychis alba* (Waldst. & Kit.) Desv. subsp. *echinata* (Guss.) P.W.Ball, $2n = 14$. Scale bar: 10 µm.

first count safely attributable to a well-defined population of *O. alba* subsp. *echinata*. This count is, however, in accordance with Cenci et al. (2000). Pedrotti and Cortini Pedrotti (1971) reported the same chromosome number for a population of *O. alba* subsp. *alba* from Umbria. Our count supports the differentiation of this taxon from *O. calabrica* Širj., a tetraploid species with $2n = 4x = 28$ chromosomes, endemic to a small area in south-eastern Calabria (Bernardo et al. 2018).

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Poaceae

Poa ligulata Boiss.

Chromosome number. $2n = 14$ (Fig. 3)

Voucher specimen. Italy. Abruzzo. Salendo a Cima delle Murelle in loc. La Carozza (Pennapiedimonte, Chieti) (WGS84: 42.11324N, 14.14273E), rupi e pendii rupestri, 2300 m, 2 August 2011, *F. Bartolucci & F. Conti* (APP n°59214).

Method. Squash preparations were made on root tips obtained from cultivated plants. Root tips were pre-treated with 0.4% colchicine for 4 h and then fixed in Carnoy solution for 1 h. After hydrolysis in 1N HCl at 60 °C, the tips were stained with leuco-basic fuchsine.

Observations. *Poa ligulata* occurs in the Iberian Peninsula and NW Africa (Ortega-Olivencia and Devesa 2018). It was not recorded for the Italian flora until recently (Bartolucci et al. 2018, Conti et al. 2019). This is the first chromosome count for this species in Italy (Bedini et al. 2010 onwards), and it agrees with previous chromosome

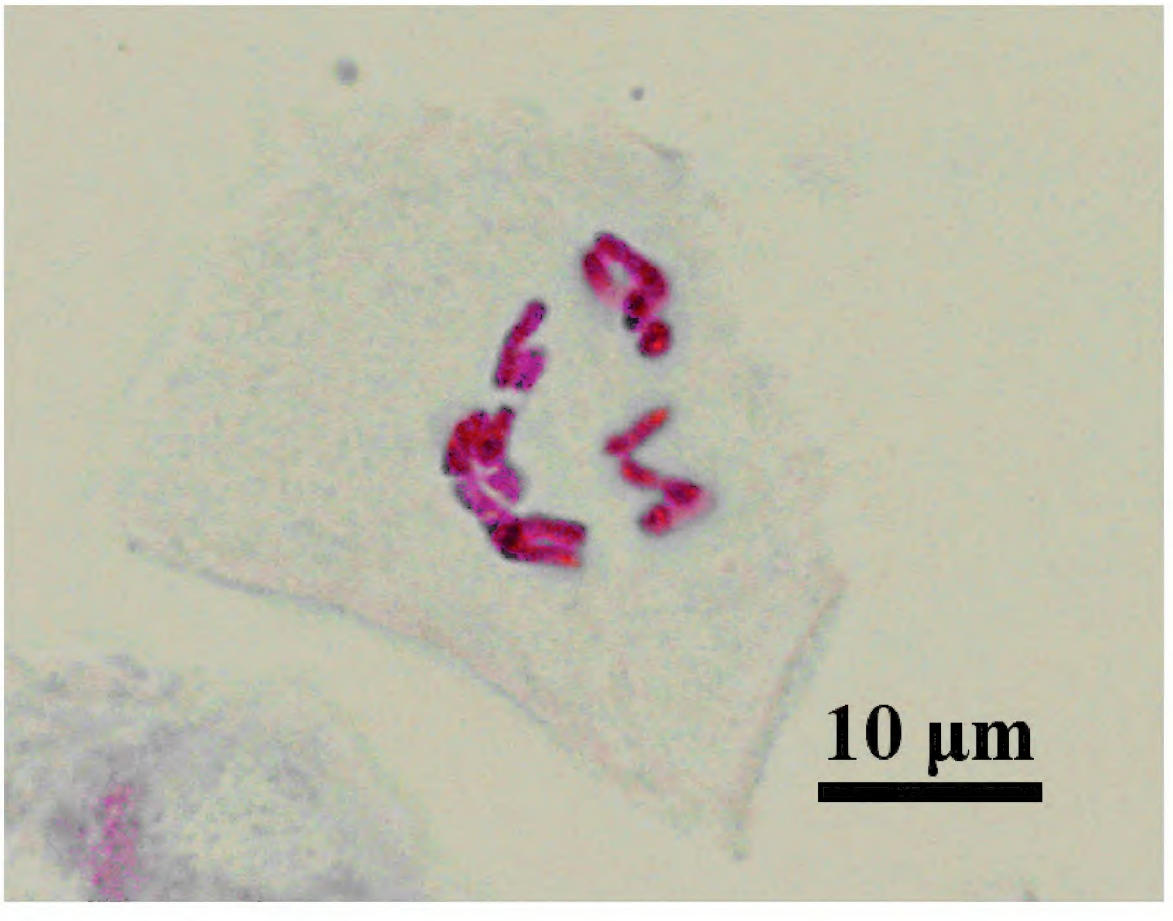

Figure 3. *Poa ligulata* Boiss., $2n = 14$. Scale bar: 10 µm.

numbers published from Spain (Küpfer 1968, Löve and Kjellqvist 1973). On the basis of a preliminary morphological analysis, the population from central Italy shows peculiar features, and a taxonomic study is in progress.

F. Bartolucci & F. Conti

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